BRUHAT BANGALORE MAHANAGARA PALIKE

MEASUREMENT SHEET

RA 1ST AND FINAL BILL

Name of work: Improvements to Roads and Drains at Chikkavenkatappa Layout, Deshbandunagara and Surrounding area in Ward No. 13, (Doddabommasandra).

Estimated Cost : Rs. 55.00 Lakhs

Head of Account : P-3726 Zonal Public Works - POW Works

Job Code: 013-23-000012

Name of Agency: Sri Subba Reddy K.V, No. 106/8, Aswathanagar, RMV 2nd Stage, Bangalore - 560094.

Work order No: BMP/EE/BTP/WO/160/2022-23 D: 13-03-2023.

	Measurements Recarded on :	28-07-2023									
Sl No	Description of work	Mesurement						Qty.	Unit	Rate	Amount
		No.	L	B1	B2	Av.B	D				
1	Demolishing cement concrete manually/ by mechanical means including disposal of material to the appropriate disposal area as per direction of Engineer-in-charge.										
		Not Executed									
								0.00	Cum	1364.12	**0.00**
2	Providing, laying and spreading available soil in the embankment on a prepared surface, pulverising, mixing the spreaded soil in place with Soil stabilisor with 2% of slaked lime using Binder spreader Machine having minimum content of 70% of CaO, grading with the motor grader and compacting with the road roller at OMC to the desired density to form a layer of improved embankment. (By Mechanical Means.										
	Qty as per Premeasurement Recorded vide E-Bill Page No. 01 is =							**225.29**	Cum	722.75	**162828.00**
3	Earth work Excavation by manual means for drains,canals, waste weir, draft, approach channels, key trenches, foundation of bridges and such simillar works in all kinds of soils , as per drawing and technical specifications, including setting out, shoring, strutting, barricading, caution lights, removal of stumps and other deleterious matter, excavated surface leveled and sides neatly dressed disposing off the excavated stuff or sorting & stacking the selected stuff for reuse in a radius of 50 m and lift upto 1.5 m including cost of labour, tools & other appurtenaces required to complete the work.										
	Qty as per Premeasurement Recorded vide E-Bill Page No. 02 to 03 is =							**458.13**	Cum	199.16	**91241.00**

Assistant Engineer

Contractor

Assistant Executive Engineer

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Sl No.	Description of work	Mesurement No.	L	B1	B2	Av.B	D	Qty.	Unit	Rate	Amount
4	Providing and laying in position Plain Cement Concrete Mix 1:3:6 (M10) for levelling course for all works in foundation. Using 40 mm nominal size graded crushed coarse aggregates and fine aggregates as per relevant IS Codes machine mixed, laid in layers not exceeding 150 mm thickness, well compacted using plate vibrators, including all lead & lifts, cost of all materials of quality, labour, Usage charges of machineries, curing, and all the other appurtenances required to complete the work as per technical specifications.										
	Qty as per Premeasurement Recorded vide E-Bill Page No. 04 is =							**67.74**			
	Qty upto 125%							**60.00**	Cum	5946.89	**356813.00**
	Qty Above 125%							**7.74**	Cum	5946.89	**46029.00**
5	Providing and laying in position Reinforced cement concrete for all Sub structures of building, Irrigation works, Sub structure works of bridges, Drain works & other parallel works from 0.50m to 3.50 m height. The granite/trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers, laid in layers, well compacted using needle vibrators, providing weep holes wherever necesary, including all lead & lifts, cost of all materials of quality, confirming to the requirements of relevant IS codes, labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. M20 (The cost of steel reinforcement & formwork to be paid separately)										
	Qty as per Premeasurement Recorded vide E-Bill Page No. 05 to 06 is =							**85.12**	Cum	6709.69	**571129.00**
6	Supplying, Fitting and Placing un-coated TMT bar Reinforcement in sub-structure complete as per Drawing and Technical Specifications.										
	Qty as per Premeasurement Recorded vide E-Bill Page No. 07 is =							**6.38**	Tonne	98690.11	**629643.00**
7	Providing and Fixing pre cast Covering Slab made out of CC 1:2:4 with **10cm** thick and Finishing cutting, including form work,curing, including cost of all materials, labour, hire charges of machinery, loading, unloading, lead and lift, transportation etc, copmplete.										
	Covering Slab										
	5th Main Road Deshabandunagara E/S	1	15.00			0.90		13.50			
		1	15.00			0.90		13.50			
		1	15.00			0.90		13.50			
		1	15.00			0.90		13.50			
		1	15.00			0.90		13.50			
		1	15.00			0.90		13.50			
		1	15.00			0.90		13.50			
		1	15.00			0.90		13.50			
		1	10.50			0.90		9.45			
	Deduct BS Slab	-1	8.40			0.90		-7.56			

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Sl No.	Description of work	Mesurement No.	L	B1	B2	Av.B	D	Qty.	Unit	Rate	Amount
	5th Main Road Deshabandunagara W/S from Culvert to SWD	1	15.00			0.90		13.50			
		1	15.00			0.90		13.50			
		1	15.00			0.90		13.50			
		1	10.40			0.90		9.36			
	5th Main Road Deshabandunagara W/S From Cross Road to New Drain										
		1	15.00			0.90		13.50			
		1	15.00			0.90		13.50			
		1	15.00			0.90		13.50			
		1	8.10			0.90		7.29			
	Chikkavenkatappa Layout										
		1	15.00			1.20		18.00			
		1	15.00			1.20		18.00			
		1	10.00			1.20		12.00			
	Above SSM Drain										
		1	15.00			1.20		18.00			
		1	15.00			1.20		18.00			
		1	8.00			1.20		9.60			
	Rain water pits	2	3.142x1.2x1.2					2.26			
			4								
								303.40			
	Total							**303.22**	Sqm	2016.88	**611558.00**
8	Construction of Dry Lean Cement Concrete Sub- base over a prepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm,aggregate cement ratio not to exceed 15:1, aggregate gradation after blending to be as per table 600-1, cement content not to be less than 150 kg/ m3 , optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant, transported to site, laid with a paver with electronic sensor, compacting with 8-10 t vibratory roller, finishing and curing.										
	Qty as per Premeasurement Recorded vide E-Bill Page No. 08 is =							**75.10**	Cum	4309.73	**323661.00**

Assistant Engineer

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Sl No.	Description of work	Mesurement No.	L	B1	B2	Av.B	D	Qty.	Unit	Rate	Amount
9	Providing and constructing un-reinforced plain Cement Concrete Pavement, thickness as per design, over a prepared sub base, with 43 grade cement or any other type as per Clause 1501.2.2 M30 (Grade), coarse and fine aggregates conforming to IS: 383, maximum size of coarse aggregate not exceeding 25 mm, mixed in a concrete mixer of not less than 0.2 cum capacity and appropriate weigh batcher using approved mix design, laid in approved fixed side formwork (steel channel, laying and fixing of 125 micron thick polythene film, wedges, steel plates including levelling the formwork as per drawing), spreading the concrete with shovels, rakes, compacted using needle, screed and plate vibrators and finished in continuous operation including construction joints, primer, sealant, curing of concrete slabs for 14- days, and water finishing to lines and grade as per drawing and technical specification clause 1501 with all lead, lifts, loading & unloading charges, cost and conveyance of all materials, labour, equipments etc., complete MORTH Specification No.1501 . as per the directions of the Engineer-in-charge of the work.										
	CC Road										
	5th Main Road Deshabandunagara From Cross Road	1	15.00	4.40	4.60	4.50	0.15	10.13			
		1	15.00	4.60	4.35	4.48	0.15	10.07			
		1	15.00	4.35	4.30	4.33	0.15	9.73			
		1	15.00	4.30	4.10	4.20	0.15	9.45			
		1	15.00	4.10	4.10	4.10	0.15	9.23			
		1	15.00	4.10	3.90	4.00	0.15	9.00			
		1	15.00	3.90	4.00	3.95	0.15	8.89			
		1	14.00	4.00	4.20	4.10	0.15	8.61			
	Total							**75.10**	Cum	6972.66	**523629.00**
10	Loading and Unloading of Stone Boulder / Stone aggregates / Sand / Kankar / Moorum. (Tipper 14 m3)										
	Qty Vide of Item No- (3)							458.13			
	Total							**458.13**	Cum	79.23	**36298.00**
11	Cost of Haulage Excluding Loading and Unloading Taking output 18 t load and lead 10 km = 180 t.km										
	Qty vide Item No - 10		458.13			1.28		586.40			
	Total							**586.40**	T.Km	112.43	**65929.00**

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Sl No	Description of work	Mesurement No.	L	B1	B2	Av.B	D	Qty.	Unit	Rate	Amount
	BOREWELL										
12	Geophysical investigation at site for sinking borewells for supplying drinking water to the habitation either through the Hand Pump MWS or P.W.S.S, by vertical electrical sounding by adopting Venner or Schlumbergers's method, including reconnaissance survey of geological formation. Geophysical investigation of existing ground water in the vicinity, its quality, quantity and acceptability of the users, indicating the location of the site, recommended depth of casing pipe required to seal the top unconsolidated formation including an extra depth of 1.0 metre in consolidated formation for proper seating of casing pipe, depth of drilling required to cover full depth of aquifer proposed to be tapped, probable yield and other information required including transportation of instruments and accessories to work site, engaging technical personal and labour required etc. NOTE: 1)Additional rate on item 1&2 is allowed for drilling in over burden and fixing Casing pipes beyond 20 M (for fixing Casing pipes only) a)Above 20 M and upto 30 M - 15%, b) Above 30 M - 30% (Measurement of overburden is restricted to the depth of casing pipe fixed excluding initial depth of 20M and projection above ground level). 2)A sum of Rs. 100/- is to be deducted for Dry Borewell towards yield test										
	Qty as per Premeasurement Recorded vide E-Bill Page No. 09 is =							**1**	Each BW	5004.25	**5004.00**
13	Sinking of Borewell of 165mm dia clear using super fast hydraulic rig of capacity 300 PSIG & above 1100 CMF & above in all strata including over burdern upto 20 m. Fixing of casing pipes, collars and cap with necessary cutting, threading and welding including transportation of rig and supporting vehicle, crew charges and cost of consumables etc., complete including yield testing at the final depth with a minimum working of compressor for one hour (Excluding cost of casing pipes, collars, cap etc., complete										
	Qty as per Premeasurement Recorded vide E-Bill Page No. 09 is =							**50.00**	Mtrs	282.29	**14115.00**
14	Qty as per Premeasurement Recorded vide E-Bill Page No. 09 is =							**50.00**	Mtrs	354.32	**17716.00**
15	Qty as per Premeasurement Recorded vide E-Bill Page No. 09 is =							**50.00**	Mtrs	376.71	**18836.00**
16	Qty as per Premeasurement Recorded vide E-Bill Page No. 09 is =							**50.00**	Mtrs	437.00	**21850.00**
17	Qty as per Premeasurement Recorded vide E-Bill Page No. 09 is =							**50.00**	Mtrs	512.98	**25649.00**
18	Qty as per Premeasurement Recorded vide E-Bill Page No. 09 is =							**50.00**	Mtrs	543.16	**27158.00**
19	300 to 350 m	Not Executed									
20	Supply of ISI mark 175mm nominal bore,plain and steel casing pipe grade of steel Fe 410 of wall thickness conforming to IS 4270-2001 and latest ammendments, electrical resistance welded steel tubes, material and conforming to IS 1387-1993 and manufactured by basic open hearth electric or basic oxygen process in random length of 5-7m both ends.threaded conforming to IS 554-1985 one end fixed with socket conforming to IS 4270-2001 and the other end with screwed pipes all shall be responsibaly free from defects. The tubes shall be responsible straight end should be with ISI marking weighing 25.10kg/m.prices include Collar - Medium duty.										
	Qty as per Premeasurement Recorded vide E-Bill Page No. 09 is =							**60.00**	Mtrs	1881.58	**112895.00**

Assistant Engineer

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Sl No	Description of work	Mesurement No.	L	B1	B2	Av.B	D	Qty.	Unit	Rate	Amount
21	Providing 250mm dia PVC Pipe 6kg/cm										
	Qty as per Premeasurement Recorded vide E-Bill Page No. 10 is =							**18.00**	Mtrs	1070.74	**19273.00**
22	Providing and fixing Borewell Cap & Clamp Set										
	Qty as per Premeasurement Recorded vide E-Bill Page No. 10 is =							**1**	Set	1752.12	**1752.00**
23	Providing,supplying to work site, Submersible Pump Set of 150mm dia suitable for bore well and confirming to IS 8034-2000;3Phase, SS Bowl & Impeller with Low volt Motor as per specifications, as per necessary ammendments and instructions of engineer incharge of work **12.50 HP - 90 LPM @ 264 m = 24 STG Outlet Dia - 2.00**										
	Qty as per Premeasurement Recorded vide E-Bill Page No. 10 is =							**1**	No	61808.95	**61809.00**
24	Providing, Laying and Fixing GI pipes conforming to IS 1239:1990 with latest amendments complete with GI fittings (excluding the cost of fittings) with cuts and threads wherever necessary, including testing for water tightness, with all lead and commissioning. (contractor will make his own arrangements for procuring water for testing) **Medium Duty GI pipe of 50mm dia**										
	Qty as per Premeasurement Recorded vide E-Bill Page No. 10 is =							**250.00**	Mtrs	466.26	**116565.00**
25	Providing wrought mild steel (galvanized) 50 mm dia GI collar confirming to IS 1239-II, 1991 with latest amendments if any.										
	Qty as per Premeasurement Recorded vide E-Bill Page No. 10 is =							**42**	Nos	213.17	**8953.00**
26	Supply and delivery at site of brand new best make non-return valve as per IS 778/1984 with ISI Mark and as per its latest amendments 50 mm										
	Qty as per Premeasurement Recorded vide E-Bill Page No. 10 is =							**1**	Nos	1241.00	**1241.00**
27	Supply and delivery at site brand new best make starter/ control panel suitable for following HP centrifugal pump confirming with ISI mark and its latest amendments 10 to 120 HP centrifugal pump										
	Qty as per Premeasurement Recorded vide E-Bill Page No. 10 is =							**1**	Nos	34536.23	**34536.00**
28	Submersible Cable 1x3x6.0 Sq.mm										
	Qty as per Premeasurement Recorded vide E-Bill Page No. 10 to 11 is =							**560**	Mtrs	140.17	**78495.00**
29	Labour charges for Erection of new / repaired submersible pump set along with GI pipes (32mm / 50mm), cable (New submersible pump set if required will be supplied by the department free of cost and released pump set should be handed over to department) including transportation (Each length = 6 m)										
	Qty as per Premeasurement Recorded vide E-Bill Page No. 11 is =							**42**	Job	146.98	**6173.00**

Assistant Engineer

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Sl No	Description of work	Mesurement No.	L	B1	B2	Av.B	D	Qty.	Unit	Rate	Amount
30	Supplying and fixing 20"x20"x2.5" polished wood board made of not less than 15mm thick plank on both sides of not more than 2 pieces and fixing the same to the wall using tapered inverted wooden plugs screws.,										
	Qty as per Premeasurement Recorded vide E-Bill Page No. 11 is =							**1**	Each	284.23	**284.00**
31	Providing, Supplying and fixing suitable for 1.1 KV class UG cable filled with necessary bitumen / insulating compound complete with terminals, clamps, bolts, nuts and washers etc. with necessary materials and labour tools and equipments as per instructions of engineer incharge of work.**3½x6 Sqm**										
	Qty as per Premeasurement Recorded vide E-Bill Page No. 11 is =							**30.00**	Mtrs	501.30	**15039.00**
32	Digging of trench of 0.6m deep x 0.50 mtr wide refilling the trench to the required ground level and consolidating etc., complete.										
	Qty as per Premeasurement Recorded vide E-Bill Page No. 11 is =							**30.00**	Mtrs	73.98	**2219.00**
33	Supplying and fixing of class A (medium duty) GI pipe of wall thickness not less than 3.25mm on pole/wall/drain crossing with necessary clamping arrangements for UG cable of 1.1 KV										
	Qty as per Premeasurement Recorded vide E-Bill Page No. 11 is =							**4.00**	Mtrs	326.09	**1304.00**
34	Supplying and fixing L.T. cast Iron pot heads suitable for 1.1 KV class UG cable filled with necessary bitumen/insulating compound complete with terminals, clamps, bolts, nuts and washers etc.										
	16Sqmm	1						**1.00**	Nos	262.82	**263.00**
35	Earthing: Supplying and fixing and wiring earth electrode for grounding circuits IC cutouts and other equipments on the meter board in the pit. The pits should be filled up with equal proportion of salt and charcoal 150mm around the pipe to complete depth. The connection from the pipe to the conduits etc. is to established through GI wire of sizes as per clause 7.3.3 of IS 732 using 12mm bolts, nuts, washers and check nuts, the pipe shall have 16 through holes of 12mm dia										
		1						**1**	Job	3650.25	**3650.00**
36	Supplying & fixing of Porcelain fuse channel with cut out on existing wooden/panel using necessary nuts, bolts and washers.										
	32 Amps	1x6						**6**	Nos	169.37	**1016.00**
37	Supplying and fixing miniature circuit breakers on existing MCB distribution boards using necessary fixing materials and 'C' Type curve, indicator ON/OFF, energy cross-3 with Short circuit breaking capacity of 10K and complete wiring as required confirming to IEC 60898. **6-32Amps TPN**										
		1						**1**	Nos	1669.38	**1669.00**

Assistant Engineer Contractor Assistant Executive Engineer

Assistant Executive Engineer

Sl No	Description of work	Mesurement No.	L	B1	B2	Av.B	D	Qty.	Unit	Rate	Amount
38	Fabricating supplying and mounting MS box made out … SWG suitable for floor / wall mounting, fully weather proof with provision for better heat dissipation, provided with hinged front cover, equipped with tamper proof locking arrangements, with suitable size clamps with necessary cable entry pipe with gland and box should be finished with 2 coats of red oxide primer paint and finally finished with approved colour enameled metal paint etc., complete										
	16SWG	2x1	120.00			60.00		14400.00			
		1	360.00			25.00		9000.00			
								23400.00	Sq.cm	0.34	**7956.00**
39	Earth work excavation for pipeline trenches in all kinds of soils by mechanical means above 600 mm trench width as per drawing and technical specifications, including setting out, construction of shoring, strutting, barricading, caution lights, bracing, using sight rails & boning rods at every 100 mm whevere necessary as directed, removal of stumps and other deleterious matter, dressing of sides and levelling the bottom of trench to the extent required , utilising the available excavated earth locally for the work etc., and all other appurtenances complete in the following strata. **All kinds of soils. Depth upto 1.50 m**										
	Qty as per Premeasurement Recorded vide E-Bill Page No. 11 to 12 is =							**24.30**	Cum	207.72	**5048.00**
40	Dismantling of cement concrete pavement by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 m3 in volume and stock piling at designated locations and disposal of dismantled materials and stacking serviceable and unserviceable materials separately										
	Qty as per Premeasurement Recorded vide E-Bill Page No. 12 is =							**6.75**	Cum	451.85	**3050.00**
41	Providing and installing at site of work P.V.C. pipes including cost of pipes and specials and labour, including lowering into trenches, laying true to line, level and perfect linking at joints leak proof including jointing of approved type with all labour charges and all lift charges, handling charges including encasing the pipe around to a depth not less than 15 cms with gravel or selected earth available from the excavation etc. complete., 75mm(weight of pipe -0.917 kg										
	Qty as per Premeasurement Recorded vide E-Bill Page No. 12 is =							**150.00**	Mtrs	204.41	**30662.00**
42	Refilling available earth around trenches / pipelines, cables in layers not exceeding 20 cms in depth, compacting each deposited layer by ramming after watering with a lead upto 50 m, and lift upto 1.5 m. Including cost of all labour complete as per specifications										
		Qty. Vide Item No. 39						**24.30**	Cum	100.26	**2436.00**
43	Supply and delivery at site of brand new best make gate valve as per IS 778/1984 with ISI Mark and as per its latest amendment Size 65 mm										
	Qty as per Premeasurement Recorded vide E-Bill Page No. 12 is =							**5**	Each	1508.77	**7544.00**

Assistant Engineer

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Sl No.	Description of work	Mesurement No.	L	B1	B2	Av.B	D	Qty.	Unit	Rate	Amount
	EIRL										
E1	Removing and resetting of footpath slab (Approved arrival rate)										
	Qty as per Premeasurement Recorded vide E-Bill Page No. 12 is =							**71.25**	Cum	228.75	**16298.00**
E2	Providing Size Stone masonry with hard stone in foundation & plinth with Cement mortar 1:6 (1 cement : 6 coarse sand)										
	Qty as per Premeasurement Recorded vide E-Bill Page No. 13 is =							**17.10**	Cum	5805.55	**99275.00**
E3	Providing and laying in position plain cement concrete for levelling course for all works in foundation. The granite / trap / basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed, laid in layers not exceeding 150 mm thickness, well compacted using plate vibrators, including all lead & lifts, cost of all materials of quality, labour, Usage charges of machineries, curing, and all the other appurtenances required to complete the work as per technical specifications. (The cost of steel reinforcement & formwork shall be paid separately **Mix 1:3:6 (M10) Using 20 mm nominal size graded crushed coarse aggregate**										
	Qty as per Premeasurement Recorded vide E-Bill Page No. 13 to 14 is =							**30.74**	Cum	6133.20	**188535.00**
E4	Providing and constructing load bearing wall with Solid Concrete blocks of size 400x150x200mm having block density more than 1800kg/m3 and minimum compressive strength of 4.00 N/mm2 conforming to IS 2185 (Part - I) - 2005 and constructed with CM 1:4 as per IS 2572:2005 including cost of all materials, labour, scaffolding and curing, usage charges of machinery etc complete as per specifications.										
	Qty as per Premeasurement Recorded vide E-Bill Page No. 14 is =							**54.60**	Sqm	1142.48	**62379.00**
E5	Providing and Fixing pre cast Covering Slab 230 mm thick made out of CC 1:2:4 and jelly 20mm Down size with steel reinforcement including form work,curing, including cost of all materials, labour, hire charges of machinery, loading, unloading, lead and lift, transportation etc, complete. As per Engineer incharge										
	For Culvert	1	5.50			1.20		6.60			
								6.60	Sqm	4903.02	**32360.00**
E6	RCC NP 4 1200mm dia										
	For Pipe	2	3.30					6.60			
								6.60	Mtrs	9300.84	**61386.00**
E7	Stone Aggregate (Single size) :40 mm nominal size										
	Qty as per Premeasurement Recorded vide E-Bill Page No. 14 is =							**2.26**	Cum	1190.48	**2690.00**
										Sub Total =	**4535841.00**
										Add GST @ 18% =	**816451.00**
										BESCOM Deposit Bill = 12630+118+2430 =14178.00	**14178.00**
										Grand Total =	**5366470.00**

Assistant Engineer

Contractor

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